Skill Sheet 5-I-5

Objective 25: Fill an SCBA cylinder from a cascade system. *(NFPA® 1001, 5.3.1)*

Student Name: _____ **Date:** _____

Directions

For this skills evaluation checklist, students will fill an SCBA cylinder from a cascade system. This skill sheet is only an example. The procedures outlined here may not be applicable to your cascade system. Always check the manufacturer's instructions before attempting to fill any cylinders. Differences exist between cascade systems. For example, some cascade systems may have a valve at the fill hose, at the manifold, or at both places.

SCBA cylinders can be quickly and efficiently refilled with the department's cascade system, a series of at least three 300-cubic-foot (8 490 L) cylinders. Standard safety precautions must be observed: Put the cylinder in a shielded fill station, prevent overheating by filling slowly, and make sure that the cylinder is completely full but not overpressurized.

Never attempt to fill a cylinder that is that is damaged or that is out of hydrostatic test date. Correct procedures must always be followed or damage to equipment can result. For example, failure to open the hose bleed valve could result in O-ring damage.

Equipment & Materials

- Cylinder to be filled
- Cascade system with shielded fill station

Criteria & Evaluation Comments

Criteria (determined by the AHJ)

After the candidate has completed the skill sheet, write comments below.

Evaluator/Candidate Comments

Pass ☐ Fail ☐

Evaluator Signature Date

Student Signature Date

Skills Evaluation Checklist

Objective 25: Fill an SCBA cylinder from a cascade system.

	Task Steps	Yes	No
1.	Check the hydrostatic test date of the cylinder.		
2.	Inspect the SCBA cylinder for damage such as deep nicks, cuts, gouges, or discoloration from heat. a. If the cylinder is damaged or is out of hydrostatic test date, remove the cylinder from service and tag it for further inspection and hydrostatic testing.		
3.	Place the SCBA cylinder in a fragment-proof fill station.		
4.	Connect the fill hose to the cylinder. a. Close bleed valve on fill hose.		
5.	Open the SCBA cylinder valve.		
6.	Open the valve at the fill hose, the valve at the cascade system manifold, or the valves at both locations if the system is so equipped.		
7.	Open the valve of the cascade cylinder that has the least pressure but that has more pressure than the SCBA cylinder. a. The airflow from the cascade cylinder must be slow enough to avoid "chatter" or excessive heating of the cylinder being filled. b. Monitor gauge to fill cylinder by about 300 to 600 psi (2 100 kPa to 4 200 kPa) per minute.		
8.	Close the cascade cylinder valve when the pressures of the SCBA and the cascade cylinder equalize. a. If the SCBA cylinder is not yet completely full, open the valve on the cascade cylinder with the next highest pressure. b. Repeat Step 8 until the SCBA cylinder is completely full.		
9.	Close the valve or valves at the cascade system manifold and/or fill line if the system is so equipped.		
10.	Close the SCBA cylinder valve.		
11.	Open the hose bleed valve to bleed off excess pressure between the cylinder valve and the valve on the fill hose.		
12.	Disconnect the fill hose from the SCBA cylinder.		

Task Steps		Yes	No
13.	Remove the SCBA cylinder from the fill station.		
14.	Return the cylinder to proper storage.		